As Purchased Weight (APW)
Conversion Factors (CF)
in AFMIS

The APW used in the construction and maintenance of the recipes in AFMIS is the weight (in pounds) or quantity of the line item (ingredient) to be used in this step of the recipe. This factor is in relationship to the Unit of Issue (UI) listed in the MIF. The weight may be slightly different than the cook will use because of loss for trimming or draining of the purchased product. Ten pounds of lettuce might need to be purchased to yield nine pounds for a salad product. Items that have a count quantity relationship to the UI can be expressed in terms of the count (EA, CO, SL, etc) for the line item.

  Food service personnel do not see this APW on the recipe cards produced by AFMIS. The end user will see the Unit of Measure (UM) and UM quantity entered by the IFA in recipe construction and maintenance. All **APWs are entered as pounds and decimals of pounds** but the UM and UM quantity can be entered as pounds(LB), ounces(OZ), teaspoons(TS), tablespoons(TB), cups(CP), quarts(QT), dozen(DZ), each(EA), or almost any designation the IFA chooses. The system will then calculate the increased or decreased recipe sizes using the UM and UM quantity figures. **The APW can be entered in terms of units of count for items which can be expressed in terms of counts for the Unit of Issue (UI) designated in the MIF.**

  Generally when the UM is expressed in pounds, the APW will be identical to the UM quantity. At the very least it will be extremely close to the UM quantity given drainage and or trimming losses. The following SQL can be run by the SA to give an indication of those items that are expressed as pounds in the UM and the APW is **not** equal to the UM quantity.

```
Select * from rin
where um = "LB" and (as_pur_wt < qty_rcp or as_pur_wt> qty_rcp)
and (nsn > "0000009999999")
```

output the result to the printer.

If the APW is way off (more than 10%) there may be a problem in the expression of the APW. The individual recipes can be checked in the IFA process for recipe maintenance.
> From the IFA COMMAND MENU select option C (IFA File Maintenance)
> From the IFA FILE MAINTENANCE MENU select option C (Recipe File Maintenance)
> From the IFA RECIPE FILE MAINTENANCE MENU select option A (Add / Update Recipes)

Once you select a recipe number you can first check the recipe header information (Name, category, cost, portion size, rating(fat rating), calories, and sodium content. All entries, except the cost, can be modified from this screen. Cost is updated automatically when ingredients are modified. If you see a recipe with 0.00 as a cost it means that there is at least one recipe ingredient that is specified for use that is not on the Master Item File(MIF), so it can not be accurately costed.

Press ESC to view the recipe ingredients.

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The ingredients (TIIN - last 7 digits of NSN, name, UM quantity, UM, and APW) are displayed in NSN sequence. Note that a change is in process to list the items by step sequence. Individual line items can be added, deleted, and modified from this screen. Some interesting notes for this screen are:

> Special NSNs (0000 stock numbers) will utilize the UM quantity, and UM only. All of these should have a zero on the APW column. These are NSNs that are used for items that are not costed (water, reserved juice, etc). NOTE: **To access the A and _G series in the recipe service a special NSN can be used in the ingredients to allow access.** Any recipe that does not have an ingredient listed can not be accessed in the inquiry process by the IFA or DFO.

> Generally the APW and UM quantity will be the same for lines with LB as a UM.

> If you see large APWs listed for items with TB, TS, and small UMs there may be a problem. Remember the APW is weight in pounds **_NOT_** the quantity of the UM. Two tablespoons (TB) of sugar may weigh approximately 1 ounce (.0625 LB). You might see 2.0000 (quantity of UM), 1.0000 (# ounces), or 10.0000 (the Conversion Factor for a 10 lb bag) where 0.0625 should be displayed.

> The list of ingredients should include all of the line items to be used in the recipe, to include all of the additional recipes referenced. Listing all ingredients will ensure that the recipe is costed properly and all items needed will be included on the shopping list and kitchen requisition. I00600, Vanilla Cream Pie should include the ingredients for 13 1-crust pie shells(.5 of recipe card I00100 (Pie Dough). Often if pie dough is included as ingredients the full recipe will be used for the 1-crust pies.

Once the ingredients are checked press ESC to initiate the cost computation process. The system will use the APW on the recipe, the CF(Conversion Factor) on the MIF, and the Unit Price(UP) on the MIF to calculate the cost of each line item on the recipe and sum to the total cost. If there are one or more line items that are NOT on the MIF the system will not calculate the cost. A report will be printed listing the item not on the MIF. Once the cost has been calculated the system will ask if you want to update the instructions.

The instruction screen should contain all of the instructions for the recipe. This should include the instructions for additional recipes used. The pies should also have the instructions for the pie dough, since the ingredients are also listed.

> NOTE: **In the update process you can use a insert character and individual character delete toggle mode:**

>> **CTRL-A (press and hold ctrl key and press A) will toggle between the typeover(AFMIS default) and an insert mode. This must be initiated for each line on the screen. If you use the insert (ctrl-A) on one line and advance to a new line, the system will return to the default typeover**

>> **CTRL-X - deletes the character beneath the cursor.**

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CTRL-D - deletes all characters from the current cursor position to the end of the line.

CTRL-U - moves the cursor from the current position to the beginning of the line.

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Importance of Conversion Factor in C8900
Reference: FSC C8900-SL   JAN 97 Para 6c(7)

The conversion factor(CF) is the figure which represents the equivalency in pounds of the unit of issue of an item. It is essential in the calculation of the price of an item for the recipes in the Army Food Management System. Without an accurate conversion factor in the MIF the cost of the individual recipes and the order quantities requested will be incorrect. Behind the scenes in the computer the unit price of the item is divided by the CF to generate a 'price per LB' for each item. This price per LB is multiplied by the ingredient weight entered in the recipe to obtain the line item cost in the recipe. If either the weight quantity entered in the recipe or the conversion factor is incorrect, the cost of the item in the recipe and the recipe cost will be incorrect.

The conversion factor is normally stated in the C8900 SL for the particular item. All items listed as a unit of issue(UI) of pound will carry a corresponding conversion factor of 1.000. If the unit of issue and container size is the same as stated in the C8900 SL the conversion factor as stated may be used. Other items may be coded with the conversion factor as MS or NC. These codes mean that the item listed has several container sizes (Multiple Sizes) or are not Normally Reducible (NC) and will carry a conversion factor of 1.000 for machine convenience only.
For these items the conversion factor must be calculated manually. The net weight of the case and the number of units of issue in each case are all that is needed for this calculation. The following formula is used:
Net weight of the case(in pounds) divided by the number of units of issue(UI) per case is equal to the conversion factor or **Count quantities can be used as an APW designation (some type of designation - 'C' as the last character in the item name field - should be made when assigning the item CF as a count unit) where count quantities can be easily identified for the Unit of Issue.**:

Net weight of Case(lb.) \ # UI per case = Conversion Factor
Examples:

Item	Net wt		# UI per case		Conversion Factor
Soda Syrup	55 LB	\	5 gal	=	11.000
Milk	48 LB	\	6 gal	=	8.000
Sweet Rolls 13 oz(.8125 LB)		\	1 CO	=	.813
Sweet Dough Mix					
#10 can	27 LB	\	6 can	=	4.500
Taco Shells	9 LB	\	1 cs	=	9.000
Corn # 10 can	40 LB	\	6 can	=	6.666
Corn # 303 can	21 LB	\	24 can	=	0.875
Sweet Rolls, tray	C	\	24 rolls	=	24.000
Tea Bags	C	\	100 tea bags	=	100.000
Bread, sliced	C	\	30 sl per loaf	=	30.000

Recipe call for 200 slices of bread for 100 sandwiches. Enter 200 as qty and sl as UM and 200 as APW. The system will calculate 200(APW)/30(CF) = 6.6 loaves required for this recipe

Recipe calls for 100 Sweet Rolls. Enter 100 as qty, EA as unit of measure, and 100 as APW. The system will calculate 100(APW) / 24 (CF) = 4.16 trays to order

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Recipe calls for 29 LB 13 oz (29.825) corn requires 4.5 (4.474) # 10 cans or 34 (34.06) # 303
Cans.   Lb. Req / CF   = Units of Issue Required X Unit Price = Item Cost
          29.8125 / 6.666 = 4.472
          29.8125 / 0.875 = 34.071

Checking Conversion Factors in AFMIS:

Comparing the unit of issue and the conversion factor in AFMIS can be accomplished by performing an SQL to list the national stock number(nsn) or tiin, nomenclature(item_nm), unit of issue(ui), and conversion factor(rcp_conv_factor) contained in the Master Item File (MIF) on the TISA database. The SQL would be constructed as:

select item_nm, nsn, ui, rcp_conv_factor
from mif
where nsn[1] > 0
order by item_nm

This SQL will produce a list by item name with the NSN, Unit of Issue, and Conversion Factor.

In all instances where the Unit of Issue is LB(pound) the conversion factor should be 1.0000.

If the Unit of Issue(ui) is other than LB the conversion factor should indicate the weight of the ui. On odd sized container the nomenclature(item_nm) should indicate the net weight of the ingredients in the container. This is something to keep[in mind when entering the item name on the MIF(enter the net weight of the unit of issue as part of the nomenclature..

Use of conversion factor in as purchased weight calculations for ratio yield items:

The conversion factor is of valuable use in calculating the as purchased weight per 100 for items which produce a greater yield than the quantity issued in.
        An example of this would be the 5+1 syrup for soda (5 parts of carbonated water mixes with 1 part syrup for each serving). The following calculation can be used: Each gallon(end product) will yield 16 8 oz servings:
                Conversion Factor / # sv per UI / mix ratio X 100 = AP wt per 100
Example: Soda issued by Gallon
    11 / 16 / 6 X 100 = 11.458 LB per 100
          Soda issued by 5 gal box
    55 / 80 / 6 X 100 = 11.458 LB per 100
Note that the CF is 55 (5 gal at 11 LB per gal) per box and because there is 5 gal per box the # of sv per UI is 16 X 5 or 80
Thus the calculations return the same result.
The same principle can be used for other ration calculations.

Concentrated Beverage Worksheet
for Recipe and SOP Calculations

Koolaide Packets: Yield = 5 gal

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.125 LB /100

Machine concentrate for Carbonated Beverage Dispensers:
 NOTE: All calculations based on gallon basis

      3 + 1 ratio = 4 gallon per gallon concentrate
            64 sv /gal   1.5625 gal/100
      12.5 LB/100 if cf/gal is 8 **(cf=conversion factor)**
      17.1 LB/100 if cf/gal is 11

      4 + 1 ratio = 5 gallon per gallon concentrate
            80 sv /gal   1.2500 gal/100
      10 LB/100 if cf/gal is 8
      13.75 LB/100 if cf/gal is 11

      5 + 1 ratio = 6 gallon per gallon concentrate
            96 sv / gal 1.04 gal/100
      8.33 LB/100 if cf/gal is 8
      11.458 LB/100 if cf/gal is 11

Concentrated Juice Mixes 3+1 ratio
      Orange yield 1 gal 6.25 can/100
            2.496 LB/can = .156 LB/sv = 15.6 LB/100
      Apple yield 1 gal   6.25 can/100
            2 LB/can = .125 LB/sv = 12.5 LB/100
      Tomato yield 1.125 gal (18 sv) 5.5 can/100
            2.250 LB/can = .125 LB/sv = 12.50 LB/100
      Lemon yield 1 gal 6.25 can/100
            2.28 LB/cn = .1425 LB/sv = 14.25 LB/100
      Grape yield 1 gal 6.25 can/100
            2.624 LB/cn = .154 LB/sv = 16.4 LB/100
      Grapefruit yield 1 gal 6.25 can/100
            2.464 LB/cn = .154 LB/sv = 15.4 LB/100

      12 oz Orange yield 48 oz (6 sv) 16.75 can/100
            .912 LB/cn = .154 LB/sv = 15.4 LB/100

Instant Tea (8955-00-823-7016) 3/4 oz pkg (.75oz) - Yield = 2 gal
      = 32 sv (.0015 LB/sv) = .15 LB/100 (3 1/4 (3.25) pg/100)

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As Purchased (AP) weights of Fresh Fruits: for 100sv

Apples - 1 6oz each	37.5 LB
Bananas - 1 6.25oz each	40 LB
Cantaloupe, fresh, seeded unpared quartered .25 small each sv	21.875 LB
Cantaloupe, fresh, seeded, pared, .75 to 1 inch pieces .50 cup per sv (2.75 oz)	35 LB
Cherries, fresh, sweet .5 cup 2.75 oz	17.625 LB
Grapefruit, fresh, halved .5 each (3.5 oz)	23.125 LB
Grapes, fresh .5 cup (2.5 oz)	16.687 LB
Honeydew Melons, fresh, seeded, unpared, sliced 1/10(.1) melon 3 oz	40.937 LB
Honeydew Melon, fresh, seeded, pared, 3/4 to 1 inch pieces .5 cup 2.75 oz	37.875 LB
Oranges, fresh, peeled, sliced, 3/8 inch 3 slices 2.25 oz	20.562 LB
Oranges, fresh 1 each 6 oz	37.5 LB
Peaches, fresh 1 ea 4 oz	25 LB
Pears, fresh 1 each 5.75 oz	36 LB
Plums, fresh 1 ea 2.5 oz	15.625 LB
Raisins 1 tbsp .33 oz	2.25 LB
Strawberries, fresh slices 1/2 cup 2.75 oz	18.25 LB
Strawberries, fresh, whole or cut in half 1/2 cup 2.5 oz	16.562 LB
Tangerines, fresh 1 ea 3.5 oz	22.937 LB
Watermelons, fresh, unpared, wedge (1 inch by 4 inches) 1 wedge each 4.25 oz	51 LB
Watermelons, fresh, pared, 3/4 to 1 inch pieces 1/2 cup 2.75 oz	34 LB

Table of Decimal conversions for ounces to pounds on next page

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Table of Decimal Conversions for ounces to pounds:

Ounce	Decimal of a pound		Ounce	Decimal of a pound	
1	.0625		9	.5625	
2	.1250		10	.6250	
3	.1875		11	.6875	
4	.2500	1/4 LB	12	.7500	3/4 LB
5	.3125		13	.8125	
6	.3750		14	.8750	
7	.4375		15	.9375	
8	.5000	1/2 LB	16	1.0000	

one(1) ounce is equal to 28 grams

Table of conversion of Common Metric Units to standard:

Grams to Ounces	Ounces to Grams
# Grams X .03527	# oz X 28.35

Kilograms to Pounds	Pounds to Kilograms
# KG X 2.2046	# LB X .4536

Liters to Quarts	Quarts to Liters
# liters X 1.06	# qt X .9463